

The introduction of inclusive cartography as a content of basic education

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Keywords: tactile maps, cartography teaching, inclusion

Abstract:

Cartography is within the Brazilian Basic Education Curriculum, whether referring to core principles (scale, orientation, geographic coordinates, etc.) or as a tool in the teaching of various Geography themes. School Cartography, as a research area, is also very popular in Brazil. A clear example is the holding of scientific events on this subject, which have taken place since 1995 (the 12th one took place in 2022), besides an impressive number of academic publishing and research on the use of maps in education. Among the most recurrent subjects discussed in the School Cartography Colloquium are those related to teaching methodologies, concerning theoretical and practical contents searching for didactic strategies in the teaching of Cartography, such as: cartographic initiation, special education - with emphasis on visual impairment - and teaching-learning of specific skills and concepts. As evidence that Tactile Cartography has been gaining strength and space along with School Cartography and that in the context of Cartographic Communication it is important to reflect on how the adaptation of visual representations for touching can contribute to the teaching of Cartography. . ALMEIDA (2011), ALMEIDA e ALMEIDA (2014), SEEMAN (2022).

This paper presents, based on bibliographical surveys and teaching experiences in the geography teaching laboratories of the University of São Paulo (USP) and the Sao Paulo State University (UNESP), elements that demonstrate the advance of Inclusive Cartography as content of Basic Education in Brazil regardless of the presence of students with disabilities in the classroom.

The tactile cartography courses and workshops taught by the authors to basic education Geography teachers, at first as a way of helping them when visually impaired students are present in their classrooms, encouraged these professionals to work on the principles of Tactile Cartography as a way to improve as a whole the learning of Cartography related content present in the school curriculum.

We have been carrying out successful experiences, in partnership with basic education teachers, in the making of tactile maps by students in the final years of elementary school, addressing questions about accessibility conditions so that all individuals, impaired or not, feel included in school. These experiences are structured around working with map elements and their importance for communicating the desired information. Several exercises are performed on scale, orientation, geographic coordinates, the use of symbols and the construction of the map subtitle. Finally, students discuss alternatives so that colleagues with visual impairments can also use maps and participate in Geography classes. SENA e CARMO (2022)

Teachers' reports, which we had access to in courses and workshops, indicate an improvement in the performance of children and young people involved in the project, an increase in general interest in maps and significant awareness concerning accessibility and inclusion issues. The goal of the proposal worked with the students is, in principle, to improve Geography classes, but it is extrapolated to respect for diversity.

The range of the courses and workshops reached the official curriculum and textbooks. In the case of the curriculum of the State of São Paulo, which has the largest public chain of state schools in Brazil (5130 schools), the theme of Tactile

Cartography is present in the curriculum, including suggestions for didactic applications in the proposed contents. (SEDUC/SP 2021). In addition to the presence of the theme in textbooks, valuing the importance of developing maps adapted for people with disabilities, which have a national reach.

The partnership between USP and UNESP in research in the area also resulted in a collection that has been visited by teachers, but mainly by basic education students who are charmed by the models and tactile maps and feel motivated to produce their own maps. This way, the discussion about the inclusion of people with disabilities in society and, consequently, in school, in activities involving the construction of tactile maps by children and young people who are not visually impaired, is a stimulus to raise awareness of this public in relation to the theme.

As an example of this insertion, during the social distancing caused by the COVID 19 pandemic, a school in the city of Bauru, in the state of São Paulo/Brazil, carried out an activity with 6th year students (10 to 12 years old), where they, after having studies in remote classes about map elements and the concepts of scale and orientation, were challenged to build a tactile map, with the materials they had at home. The activity had a great participation of the students, who were so interested in the subject that they asked to talk to a specialist in the area. The result was the students' awareness of the issue of inclusion and the improvement of their performance in assessments on the subject of cartography.

The reflection of the presence of Cartography in the school curriculum is also the insertion of this theme in the national Geography degree courses, which can be noticed from the first decade of the 21st century in some universities. Tactile Cartography is one of the modules of the discipline of School Cartography, offered to future teachers. In the experience of the authors, it can be said that most of the geography teachers who work with Tactile Cartography during their graduation tend to find it easier to teach and work with different types of maps in teaching, in addition to being more sensitive to issues linked to Special Education and the inclusion of students with disabilities in regular classes.

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